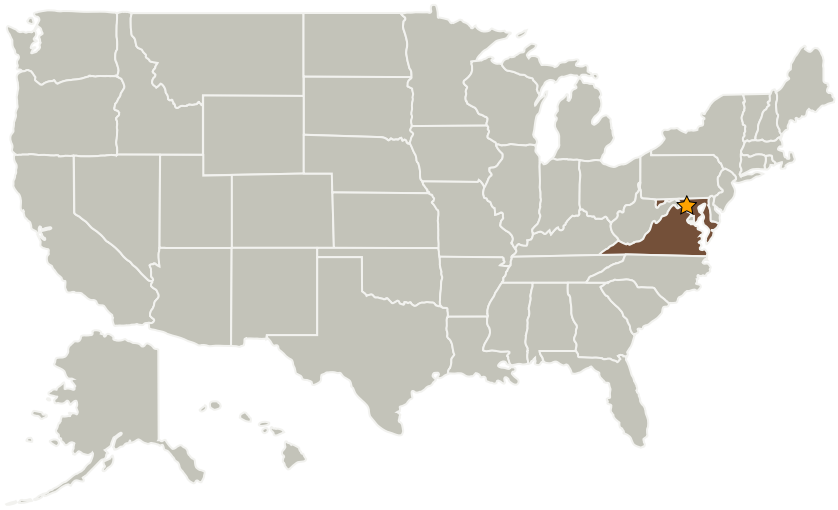
Metal Vaccro, Phase I

Completed Technology Project (2004 - 2004)

Project Introduction

NASA has determined that the use of modular and reconfigurable components is critical for the success of future large and complex space systems. In order to achieve this goal, it is necessary to be able to assemble and reassemble modules both on the ground and on orbit. Therefore, it requires a means to join components that is simple, reliable, and non-intrusive as well as strong and stiff enough to withstand multiple connections and disconnections. AeroAstro?s solution is to apply a new micro-scale mechanical joining technology, Vaccro, to the modular space systems. Created by VACCO Industries, Vaccro is analogous to ?metal Velcro? in that two surfaces will mechanically adhere to each other upon contact. Depending on the type of Vaccro used, these bonds can be either permanent or reversible. With this technology, the surfaces of space system components and modules would be micro-machined with Vaccro features during the ground fabrication process. With slightly different channel geometries, the surfaces can be peeled apart and rejoined, or they can be made such that the surfaces lock together permanently. AeroAstro along with VACCO Industries, proposes to determine the specifications for and material qualities of a space suitable Vaccro product.

Primary U.S. Work Locations and Key Partners



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Goddard Space Flight Center (GSFC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★Goddard Space Flight Center(GSFC)	Lead Organization	NASA Center	Greenbelt, Maryland
AeroAstro Corporation	Supporting Organization	Industry	Ashburn, Virginia

Primary U.S. Work Locations	
Maryland	Virginia

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Paul Gloyer

Technology Areas

Primary:

- TX14 Thermal Management Systems
  - TX14.2 Thermal Control Components and Systems
    - TX14.2.3 Heat Rejection and Storage